CBC (AMERICA) Corp.

Megapixel Cameras

and

Surveillance Software

User Manual

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www.cbcamerica.com

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Introduction

Thank you for purchasing CBC mega-pixel IP video cameras. MP2, MP3DN, MP5, and MP8D are state-of-the-art IP cameras designed to deliver full-motion high definition digital video across local area networks. The CBC software system accommodates multiple cameras connected to a single video server and provides for a variety of display and digital archiving modes. Delivering over 45 Mpixels/sec of crystal-clear imagery, CBC cameras represent a vastly superior alternative to low resolution analog and digital video. To accommodate this level of performance certain minimum system requirements have to be met. Please make sure to read this entire Manual and to follow installation instructions given below.

Technical Support

CBC (America) technical support can be reached:

- On the web at www.cbcamerica.com
- In the US, toll-free phone 1-800-888-0131 (West Coast) or 1-800-422-6707 (East Coast)

System Requirements

Dedicated PC

A dedicated PC is recommended to receive the image streams from cameras for archiving and display. The suggested minimum computer requirements are as follows.

Standard Performance, 16-17 FPS (frames per second) of full-resolution video:
CPU: 3.4 GHz
RAM: 512 MB
Video Card: 1600x1200, 64 MB RAM
Network card: 100 base-T

High Performance, 24FPS at full resolution for MP2:
CPU: Dual CPU or DualCore 3.2 GHz
RAM: 1 GB
Video Card: 1920x1200, 128 MB RAM
Network card: 100 base-T, 2 network cards – one for cameras and one for remote viewing

A PC with single, slower CPU is sufficient in the case when images are to be archived, but not displayed.

HDD size according to the desired capacity of the video archives (approximately 200Kbytes/image). As an example, two 400GB drives will yield approximately 6 days of archiving capacity for an 8-camera system recording at 1 frame per second.

Network Switch or Router

Using a 100 Mbps network switch or router is recommended. Simple hubs do not provide collision management and are not suitable for multi-camera CBC system. Suggested models:

Power-over-Ethernet routers:

- Netgear ProSafe 8PT 100Base-TX Switch with PoE #FS108PNA
  10/100Base-TX w/4 PoE 100Base-TX
  Street Price $110

- D-Link Web Smart #DES-1316 (POE Switch/Hub)
  www.dlink.com
  10/100Base-TX
  8 PoE ports and 8 non-PoE ports
  True IEEE 802.3af
  Street price $388(www.compuplus.com)
- TRENDnet #TPE-S88 (POE Switch/Hub)
  www.trendnet.com
  10/100Base-TX
  8 PoE ports and 8 non-PoE ports
  True IEEE 802.3af
  Street price $250(www.provantage.com)
- PowerDsine #PD-6001/AC (PoE Single port hub)
  www.powerdsine.com
  10/100Base-TX
  Single Midspan POE port
  True IEEE 802.3af
  Street price $29(www.provantage.com)

PoE network equipment must be CE marked for use in European Community. Note that the cameras are designed for use with indoor network cabling only.

Recommended Accessories

Monitors:

- Dell UltraSharp 2405FPW
  24-inch Wide Aspect Flat Panel LCD Monitor with Height Adjustable Stand
  Street price $750 (www.dell.com)
- Samsung's 243T
  24 Inch LCD Display
  Street Price $1400 (www.samsung.com)

MP3DN requires a 3" window; all other cameras can use most any outdoor housing.

Camera Reference

Introduction

MP2, MP3DN, MP5, and MP8D are mega-pixel resolution IP cameras capable of delivering crisp, low-noise images at a video frame rate.

MP2 is a 2-megapixel resolution camera having maximum resolution of 1600 by 1200 and achieving a maximum frame rate of 24.

MP3DN is a dual-sensor, day-night camera featuring a 3-megapixel color sensor paired with a 1.3-megapixel monochrome sensor sensitive to near infrared illumination. When the scene is well-illuminated the 3-megapixel sensor is selected to deliver color images of up to 2048x1536 pixels. To provide seamless transition between day and night modes the color sensor is set to default resolution of 1920x1200 pixels. In low-light conditions MP3DN can automatically switch to the 1.3-megapixel (1280x1024) monochrome sensor, enabling the delivery of clear imagery at illumination levels as low as 0.01 lux. MP3DN typically delivers 20 FPS in day mode and over 30 FPS in night mode.

MP5 is a 5-megapixel resolution camera. Its maximum resolution is 2592 by 1944.

MP8D is a quad-sensor 8-megapixel panoramic camera consisting of four 2-megapixel sensors and operating at up to 22 FPS per camera.

All cameras are equipped with LAN connector and can deliver image data at a maximum data rate of up to 55 Mbps. Images are sent over the network in a compressed Motion JPEG format using TFTP protocol.

All cameras feature:

- Automatic exposure (AE) and Gain (AGC) control
- Automatic backlight compensation
- Automatic multi-matrix white balance
- 50/60Hz selectable flicker control
- Electronic Zoom, Pan and Tilt (PTZ)
- Programmable brightness, saturation, gamma, sharpness, windowing and decimation
- Simultaneous delivery of full-field view and zoomed images at video frame rate
- Electronic image rotation by 180 degrees
- On board motion detection (except MP5 and MP8D: subject to change)
- Optional auto iris

Connectors

MP2, MP3DN, and MP5 have the following connectors located on the rear side of the camera housing:

- LAN connector, accepting a network UTP or ScTP cable carrying 100 Base-T. The LAN connector also accepts power-over-Ethernet
- DC jack, accepting 9V-12V DC supply
- Optionally, a DC auto-iris connector. MP3DN does not support auto-iris and does not have this connector

Power

Power for MP2, MP3DN, and MP5 can be supplied as follows:

- Via DC jack, 9V-12V. For power ratings see below. The center contact in the power connector is positive.
- Via LAN connector, 48V DC over spare wires or over data pairs. The cameras are compliant with IEEE 802.saf. The polarity is arbitrary. For a list of recommended PoE switches. (See "***Network Switches and Routers")***

Power consumption will vary depending on the mode of operation. The maximum power consumption takes place when the camera is polled at full frame rate and runs at full resolution. The maximum power consumption is 3.6 Watts for MP2; 4.5 Watts for MP3DN and MP5; and 8 Watts for MP8D.

Housing and Mounting

All camera models feature a durable aluminum housing that minimizes fire hazards. The housing is not hermetically sealed. The ambient temperature should be maintained between 0°C and 50°C. The cameras are not to be used outdoors without appropriate protective enclosures.

Cameras are mounted using a ¼" x 20 threaded hole at the bottom of the housing. When mounting the camera make sure the screw that goes into the hole is short, ¼" or less, and does not touch the camera board.

The cameras are to be installed according to the applicable code. The mounting means should be adequate for mounting a 1 lb camera (except MP8D that weighs 4lbs)

Network Cabling

Category 5 cabling or better is recommended. All network cabling must be installed according to applicable codes and regulations.

Optics

MP2, MP3DN, and MP5 should be used with a 1/2" or 2/3" optical format lenses. MP3DN requires two manual iris lenses and has a limitation on lens diameter (<38mm).

Manual Lenses

A wide variety of C/CS mount lenses with megapixel resolution may be used with CBC cameras. Note that all C-mount lenses require a 5mm adaptor ring. Some lenses may also require 0.4mm-0.8mm adjustment spacers. CBC (America) lens suggestions include:

- Computar M0514-MP (5mm), M0814-MP (8mm), M1214-MP (12mm), M1614-MP (16mm), M2514-MP (25mm), M5018-MP (50mm).

Using Manual Iris Lenses

Choosing the lens correctly is very important for mega-pixel cameras. Poorly selected lenses may cause the image to appear blurry when the lens iris is fully open or closed too much. To deliver sharp mega-pixel resolution images you should:

- Use mega-pixel-resolution lenses.
- Obtain best resolution and depth of focus by having the iris slightly closed.

When setting up the camera, direct the camera at the scene and try closing the iris by several F-stops. At some point the image will look it's sharpest. Leave the iris closed at this value.

Auto-Iris Lenses

Standard DC auto-iris lenses could be used with MP2 cameras equipped with the auto-iris feature. CBC (America) recommends the following high-resolution optics:

- Computar HG2Z0414FC-MP 4mm-8mm

Using Auto-Iris Lenses

MP2 is available with DC auto-iris option. To use the DC auto-iris lens:

1) Attach the lens to the CBC camera.
2) Plug in the lens cable into the connector on the back of the camera. Make sure that the lens cable is long enough. Many DC lenses are available with short and long cable options.

The camera will automatically detect the presence of an auto-iris DC lens and start using it. Auto-iris lens operation typically proceeds as follows:

- If illumination is sufficient, the camera will close the iris within half-a-minute.
- When the iris is closed, the image should become visibly sharper. As the iris is gradually closed the image brightness may fluctuate slightly.

Monitoring Iris Status with CBC Video System

You can monitor the state of the iris in CBC Video System "Settings" dialog. See "Operating CBC Video System" for details.

Accessing CBC Cameras

Cameras can be accessed and controlled by means of

- CBC Video System software

- User software utilizing CBC (America) camera SDK (Software Developer Kit)
- HTTP requests issued from IE Explorer or other applications

Supported Network Services

MP2, MP3DN and MP5 implements deliver video over TFTP and HTTP network protocols. TFTP protocol yields the highest frame rate. It is accessible to the user through CBC SDK. CBC Video software also utilizes TFTP protocol. HTTP protocol delivers lower frame rates but allows direct access to the cameras through Internet Explorer or other HTTP-based application.

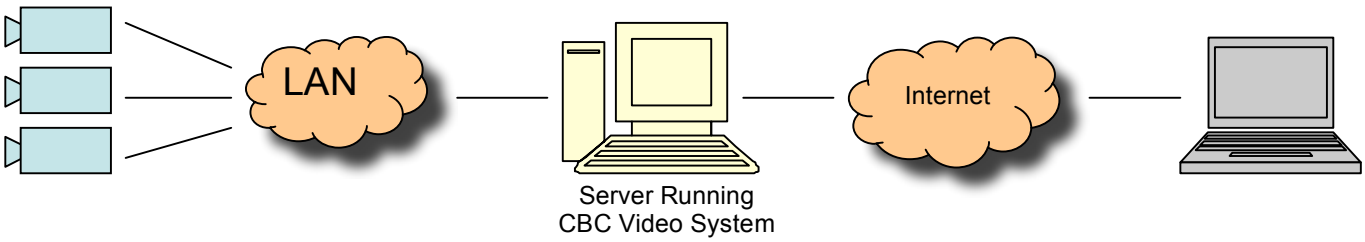
VIDEO SURVEILLANCE SOFTWARE MPS

To complement its line of megapixel cameras CBC (America) offers full-featured video surveillance software, MPS.

MPS supports full-motion real-time multi-camera viewing and policy-based archiving, remote access to live and archived video via Internet Explorer, post-event zooming from digital archives, simultaneous viewing of full-field of view and multiple zoomed images and a multitude of other features that take advantage of unique functionality and performance of CBC (America) cameras.

A typical system consists of a number of cameras connected over the local or wide area network to a server PC running CBC Video System, MPS. To achieve full motion archival rate the server may be placed locally to the cameras so that the interconnecting LAN has sufficient bandwidth and small roundtrip delay between cameras and the server PC.

A remote PC can connect to the server PC over a slower network connection, such as over Internet. Once connected, the remote PC can display live video stream and browse archives using Internet Explorer. Note that when used with CBC Video System the remote PC does not connect to cameras directly, but rather to the CBC Video System server.



Software Installation

To install CBC software:

1. Make sure your Windows XP/2K account has administrative privileges.
2. Run the setup.exe

Setup process installs software and places two shortcuts, “CBC Camera Installer” and “CBC Video System” on the desktop and in the Start menu.

Configure Firewall

As you start CBC applications, your PC may prompt you to permit access to the network. CBC Video System includes two applications that need access to the network:

- CBCInstaller.exe: the camera finding and installation program
- LocalMachine.exe: the viewing and archiving program

Both executables are located in the CBC installation folder. You should grant access to these two applications when the firewall prompts you. For example:

- For Norton Internet Security choose “Permit Always” and click Ok, see Figure 1
- For McAfee Personal Firewall click “Grant Access”, see Figure 2.

Figure 1. Open Norton Internet Security firewall for CBC Camera Installer application

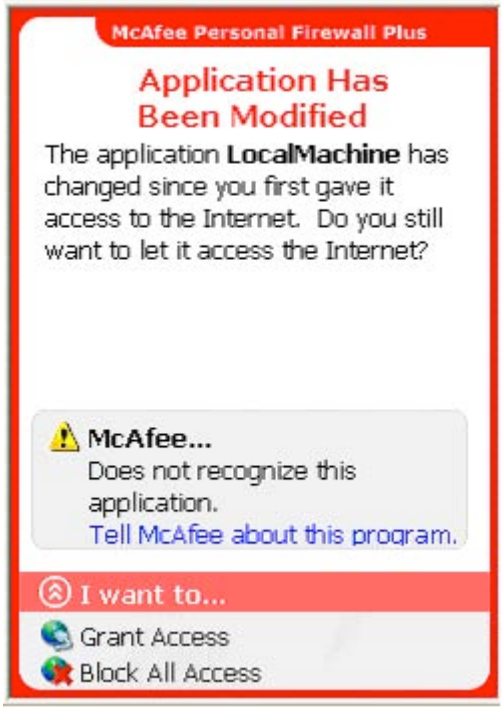

McAfee Personal Firewall Plus
Application Has Been Modified
The application LocalMachine has changed since you first gave it access to the Internet. Do you still want to let it access the Internet?
McAfee...
Does not recognize this application.
Tell McAfee about this program.
I want to...
Grant Access
Block All Access

Figure 2. Open McAfee Personal Firewall for CBC Video System application

If you are using Windows XP firewall, follow these instructions:

1. Click the Windows Start button and select “Control Panel”.
2. From the “Control Panel” open “Windows Firewall”.
3. “Windows Firewall” settings dialog will appear. If the firewall is “on”, make sure “Don’t allow exceptions” is unchecked, see Figure 3.
4. Click “Exceptions” tab. Make sure “CBC Manager”, “CBC Video System” and “CBC Installer” appear in the list of programs and services and have a checkmark next to them, see Figure 4. If these applications are not in the list, click “Add Program” button.
5. Find “CBC Installer” in the list of programs and click “Ok”. Repeat same for “CBC Video System”.
6. Click “Ok” to close the Windows Firewall dialog.

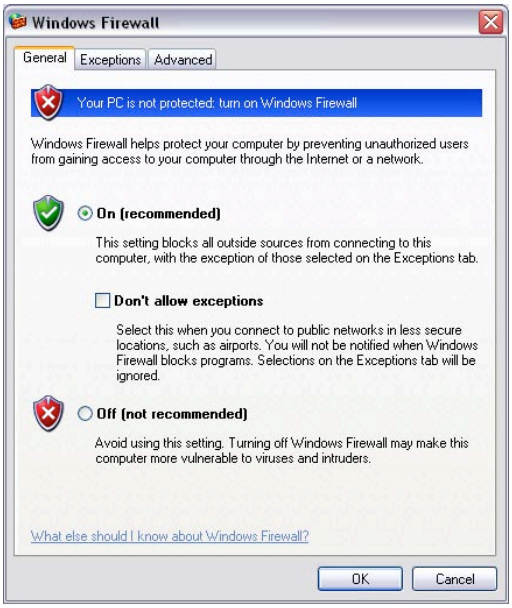

Windows Firewall
General
Exceptions
Advanced
Your PC is not protected: turn on Windows Firewall
Windows Firewall helps protect your computer by preventing unauthorized users from gaining access to your computer through the Internet or a network.
On (recommended)
This setting blocks all outside sources from connecting to this computer, with the exception of those selected on the Exceptions tab.
Don't allow exceptions
Select this when you connect to public networks in less secure locations, such as airports. You will not be notified when Windows Firewall blocks programs. Selections on the Exceptions tab will be ignored.
Off (not recommended)
Avoid using this setting. Turning off Windows Firewall may make this computer more vulnerable to viruses and intruders.
What else should I know about Windows Firewall?
OK
Cancel

Figure 3. Windows firewall is enabled and exceptions are allowed

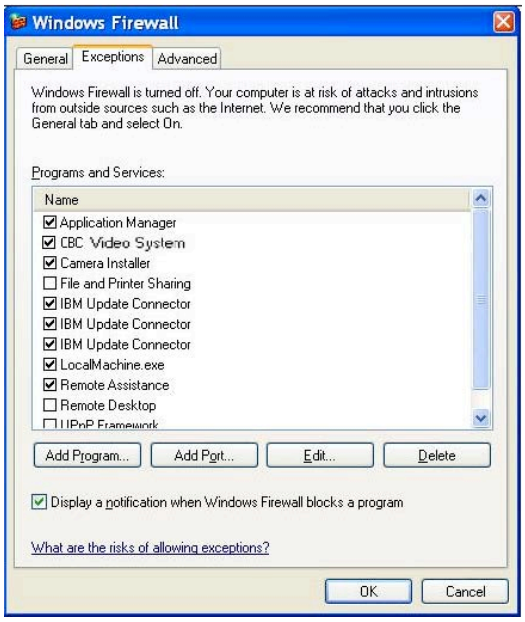


Figure 4. Verify "LocalMachine" or “CBC Video System”, “CBC Manager”, and “CBC Installer” are in the list of exceptions

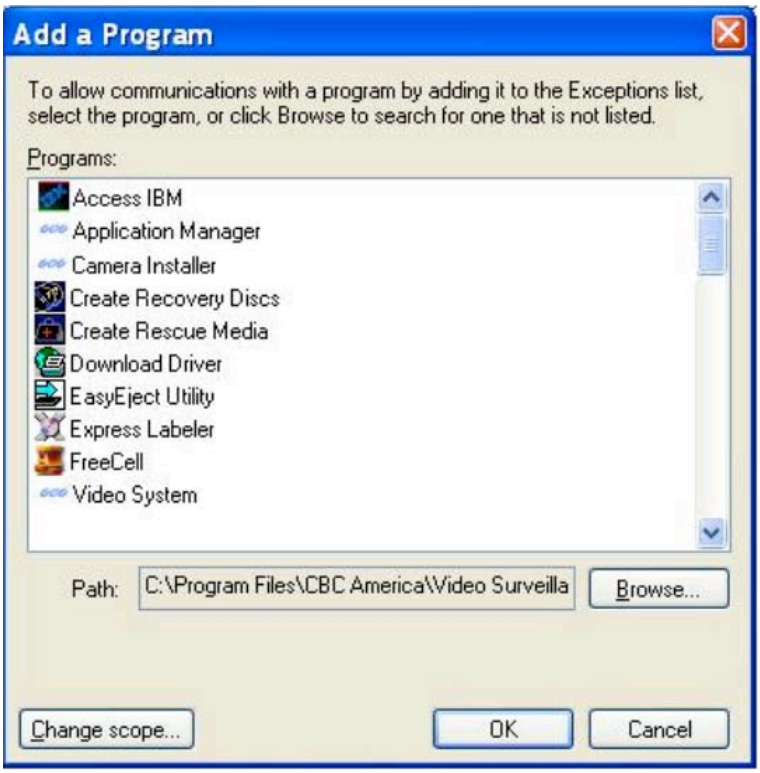


Figure 5. Add CBC Installer, CBC Application Manager, and CBC Video System to the list of exceptions

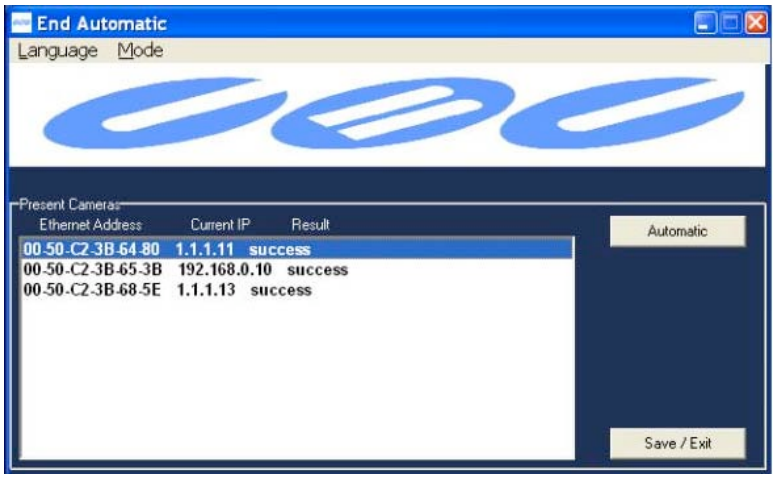
CBC Application Manager

Setup.exe places the shortcut to the CBC Application Managers on the user's Desktop. All programs and utilities comprising CBC Video System can be accessed via CBC Application Manager. The standard selections include Camera Installer, Video System, and AVI Maker. The Firmware Loader can also be listed as shown below if the CBCFirmwareLoader.exe is placed in the CBC (America) Video Surveillance folder.

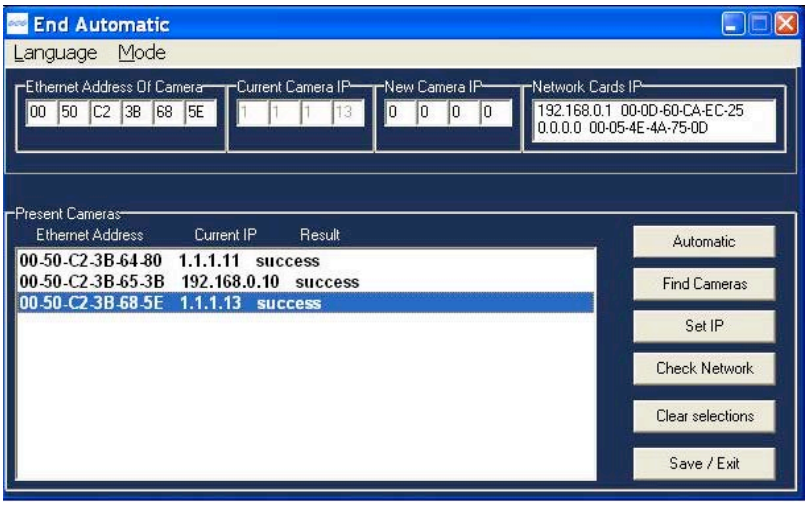
Camera Installer

Camera Installer allows to find all CBC cameras that are present on the local area network, assign IP addresses to detected cameras and to verify that the cameras are accessible and operational. Camera Installer saves information about installed cameras into an .ini file used by CBC Video System. Camera Installer supports two modes of operation – Basic and Advanced.

- Basic Mode – In this mode Camera Installer detects all CBC cameras that can be reached by the broadcast request and automatically assigns IP addresses to the cameras, selecting those addresses that belong to the same sub-network as the computer running Camera Installer and that are not assigned to other devices. To detect and install the cameras automatically the user should simply press Automatic button in the Basic mode. The installer will find, configure and verify the operability of the cameras and will report installation results as shown below. Once the installation is completed the user should press Save/Exit button to save the installation information in the MPS .ini file



- Advanced Mode – In this mode the user can detect all CBC cameras present on the local area network and choose one or more cameras for the installation. Furthermore, Advanced mode allows to set IP of the cameras either automatically (as in Basic mode) or manually, if specific values of IP addresses are required.



The "Advanced" mode provides the following set-up functions:

- Automatic – this function installs the cameras and verifies their operation and is similar to Automatic function in the Basic modes. However, in the Advanced mode the Automatic installation only acts on those that were highlighted by the user from among the cameras displayed in the Present Cameras window.
- Find Cameras – this function will locate all CBC cameras that are present on the local network and are accessible by the broadcast request. At the completion of this operation the Installer will show all detected cameras.
- Set IP - this function allows the user to program specific IP address in the camera. If the camera has already been found by Find Cameras function then the user should highlight that camera, type desired IP address in the New Camera IP window and click Set IP. If the camera can not be found by Find Cameras function due to the fact that existing firewall blocks broadcast requests, the user may be able to still change camera IP by typing both camera Ethernet (MAC) address and desired IP in the boxes at the top of the Installer and clicking Set IP button.
- Check Network – This feature will find the active network adapters on your system. The results will be displayed in the "Network Cards IP" section of the Advanced window.
- Clear selections – Clear Selections – This feature will clear/reset any information in the "Present Cameras" section other than the MAC and IP addresses listed.
- Save / Exit – Save/ Exit – This feature will save and the set-up information in the .ini file of the CBC Video System and exit the Installer.

Operating CBC Video System MPS

Note: CBC Video System requires a license file for each of the installed CBC cameras. The license is tied to a unique camera's MAC address. The license files are located in the C:\Program Files\CBC America\Video Surveillance\license folder. However, for the evaluation purposes, MPS will operate any one CBC camera without a license.

After the cameras are successfully installed, the CBC Video System can be activated by clicking on the corresponding **Run** button in the CBC Application Manager.

The CBC (America) welcome screen will appear prompting the user to select **OK** or **Hide.** If none is selected, the CBC Video System will start on its own after a few seconds. Shown below is the CBC Video System displaying live video from sixteen CBC cameras. If **Hide** is selected, the application will be placed onto the system tray of the Windows task bar.

Toolbar

The toolbar of the CBC Video System is located in the upper portion of the screen above the video display area. It contains the following icons:

- Turns on/off a drop-down list of the installed cameras. Individual cameras are disabled/enabled by left double-clicking on the camera number. When disabled, live video image from the disabled camera is replaced with a blue rectangle, and the camera number in the drop-down list is marked with a red cross.

- Displays the Settings menu (see Setting below).
- Enables a full screen display without the toolbar and menus.
- Selects screen layout for viewing live/archived video from multiple cameras (from left to right): single camera layout, 2x2 camera layout; 3x3 camera layout; 4x4 camera layout; 10-camera layout with 2 large and 4x2 smaller images; 8-camera layout with 1 large, 3x1 and 1x4 smaller images; 13-camera layout with 1 large, 2x2 and 4x2 smaller images. Depending on the chosen screen layout and the actual number of the installed cameras, the unused sections of the layout will be filled with a watermark image of the CBC (America) camera.
- Displays the Archive controls (see Browsing Archives below).
- Takes a snapshot of live video or an archive. The snapshot is taken from the camera which is highlighted in the drop-down list of the installed cameras (see above). To highlight another camera, left-click on the camera number. To take the snapshot from all cameras, highlight "cameras" at the root (top) of the drop-down camera list. The snapshot file names contain the camera number, date and time of the snapshot. To locate/view the snapshots in the snapshot folder, right-click anywhere on screen, then select "photo", "browse". Alternatively, snapshots can be taken by right-clicking on the live video image, and then selecting "photo", "save". The directory path to the snapshot folder is specified in the Settings menu (see Settings), or using the Right-Click menu under "Save To" (see Right-Click menu). By default, this is the directory C:/Program Files/CBC America/Video Surveillance/photo.

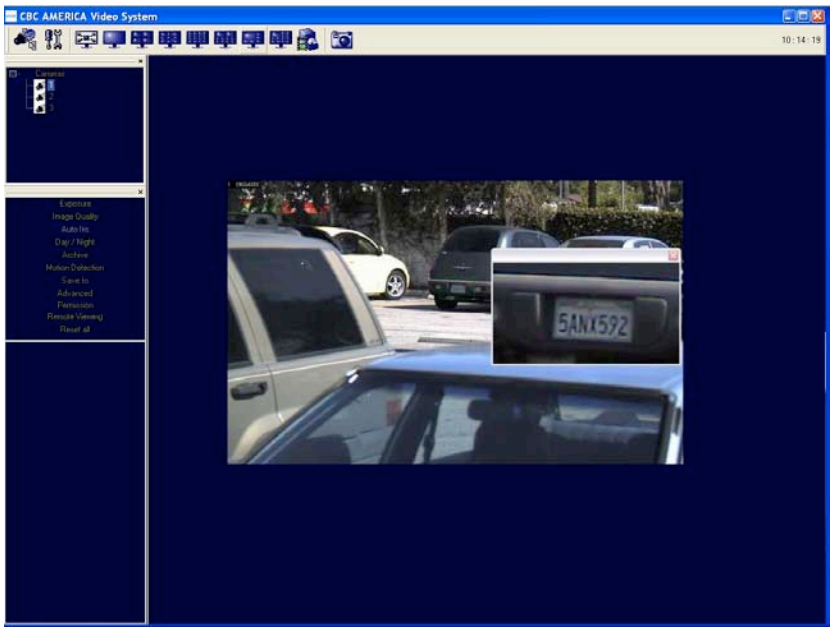
Selecting Full / Reduced Resolution and Zoom

In order to fit multiple video images on screen the images are displayed at a reduced resolution. The format of the reduced resolution display is determined by the chosen screen layout (see Toolbar above).

An individual camera image can be expanded to a full resolution display by left double-clicking on the image. The full resolution image can be scaled back to its reduced resolution display by left double-clicking on the image. Image resolution (in pixels) is displayed in the upper left corner of the image.

An alternative mode of viewing the high resolution content is the zoom window (see screen snapshot below).

To zoom-in on an area of interest, draw a rectangle with the mouse (by left-clicking and holding down the mouse button). A separate zoom window will open up showing live video of the selected area at a full resolution. A green outline of the selected area will appear in the underlying reduced resolution image. Zooming in and out is performed by pressing Page Up and Page Down on the keyboard, or alternatively by rotating the mouse wheel (if available). Panning of the zoomed area is performed by dragging the green outline across the underlying camera image with the mouse (by left-clicking within the outline and holding down the mouse button), or alternatively with the keyboard arrow keys.
A maximum of four independent live zoom windows can be opened per each camera. Each zoom window will display live video at full resolution. Note: the panoramic camera MP8D allows only one zoom window per channel.



Settings

Settings menu is displayed by clicking on the Settings button in the toolbar.

Settings menu (shown on the left) is the top level menu for all settings provided in the CBC Video System. Selecting one of the menu items opens up a lower level drop-down menu containing detailed settings and options. Depending on the camera model, some of the listed groups of settings may become unavailable (for example, Day/Night settings are available only for the MP3DN camera).

Note: selecting "Reset all" restores default settings only in the currently displayed lower level drop-down menu, but does not affect other groups of settings listed in the Settings menu. If no lower level menu is displayed, the "Reset all" item is disabled as shown on the left.

The lower level menus contain a "Camera" field that displays the camera number which the settings are applied to. The "Camera" field can be expanded to a drop-down list of all installed cameras to select from. The list includes an "All cameras" option to apply settings to all cameras.

Exposure

- "Auto exposure On/Off" is an option to enable/disable the on-camera automatic exposure computation. Auto exposure maintains the target image brightness under changing lighting conditions.

Exposure is a lower-level menu to adjust exposure related settings:

- "Illumination" is a group of options to adjust camera's white balance computation to the illumination of the scene. "Automatic" enables the camera to adjust for illumination automatically.

- "Lighting" is a group of options to adjust camera's auto exposure computation to the oscillation frequency of the indoor lighting: European (50 Hz) or US/Japan (60 Hz).

- "Low Light Mode" is a group of options to adjust camera's operation under low light conditions:

  a. "High Speed" is to enable the shortest exposure time, selectable from a drop-down list "Short Exposure" between 1 and 10 ms, and the maximum frame rate. This option will reduce motion blur, but may result in a noisier

  b. "Speed" is to enable short exposure time not exceeding 10 ms by raising video gain as much as possible unless the low light conditions require a further time increase (up to 80 ms).

  c. "Balanced" is to enable medium-duration exposures up to 20 ms by raising video gain as much as possible unless the low light conditions require a further time increase (up to 80 ms).

  d. "Quality" is to enable longer exposures up to 40 ms, by raising video gain as much as possible unless the low light conditions require a further time increase (up to 200 ms). Motion blur may become high, but video will contain less noise under low light conditions.

  e. "Moon Light ™ is to enable very long exposures up to 500 ms if necessary.

Image Quality

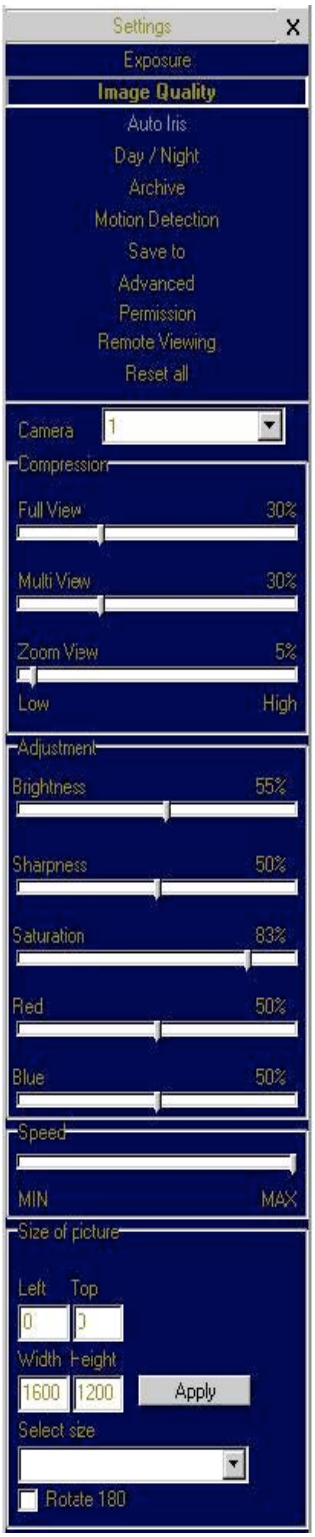


Image Quality is a lower-level menu to adjust image quality settings:

- "Compression" adjusts the level of JPEG compression applied to the images in different display modes: "Full View" when displaying full resolution video; "Multi View" when displaying multiple cameras at a reduced resolution; "Zoom View" when displaying zoom windows.

- "Brightness" adjusts image brightness.

- "Sharpness" adjusts image sharpness.

- "Saturation" adjusts image color saturation.

- "Red" adjusts the red tint. This setting changes the target for camera's automatic white balance computation. The effect is gradual: it takes 20-30 seconds for the camera to fully adjust to the new setting.

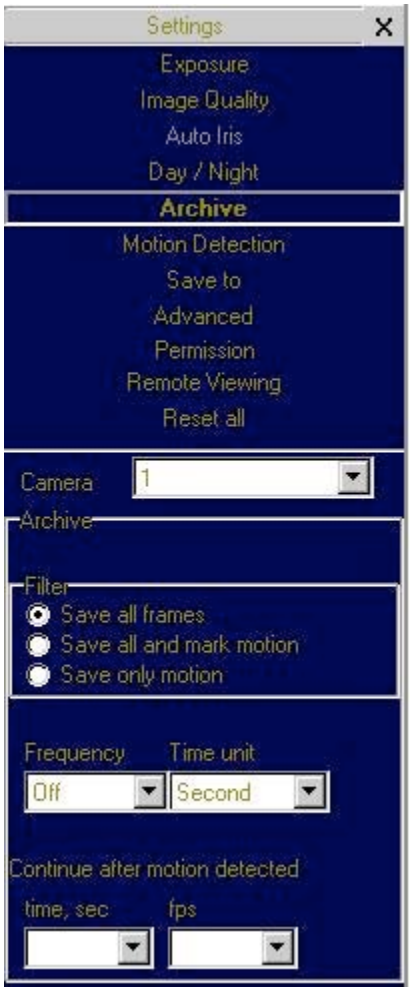
- "Blue" adjusts the blue tint. This setting changes the target for camera's automatic white balance computation. The effect is gradual: it takes 20-30 seconds for the camera to fully adjust to the new setting.

- "Speed" adjusts the rate at which the computer requests images from the camera. The maximum rate is limited by the camera, (different for different camera models).

- "Size of Picture" adjusts starting coordinates and the image size. Note: affected by "Don't update sensor window" in Advanced settings.

- "Rotate 180" is an option for flipping the image vertically and horizontally such that it is rotated 180 degrees.

Archive



Archive is a lower-level menu to set up video archival settings:

- "Filter" is a group of archiving options:
  - "Save all frames" enables archiving the entire video stream received from the camera.
  - "Save all and mark motion" enables saving the entire video stream and marking the frames when motion was detected for future archive browsing.
  - "Save only motion" enables archiving only when motion was detected by the on-camera motion detector, and disables it in the absence of motion after a period of time specified under "Continue after motion detected".
- "Frequency" is a drop-down list of options for archive recording rate. The "Off" option disables the archive recording. The "Max" option sets the archive frequency limited only by the camera and the network (different for different camera models).

- "Continue after motion detected" is a drop-down list of options for the duration of archiving after the motion was last detected by the on-camera motion detector, and the frame rate at which such recording is done. Note: if new motion is detected during such after-motion recording, the rate of recording will revert to the one specified under "Frequency".

Motion Detection

Motion detection is achieved by analyzing inter-frame brightness changes on a pixel-by-pixel basis. There are two modes of Motion Detection supported in CBC Video System: a software mode and an on-camera mode.

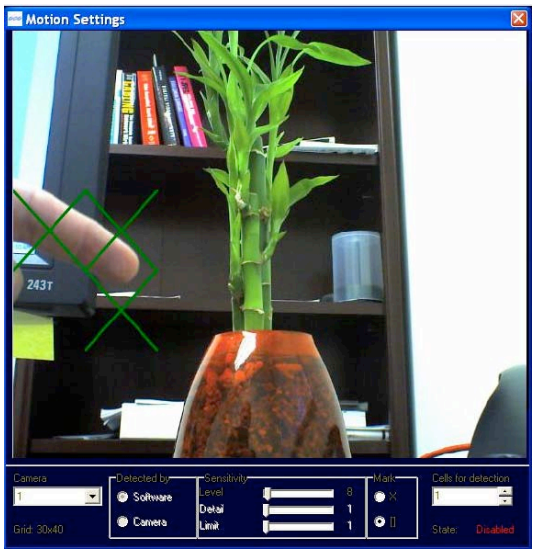
- The software mode performs motion detection by processing the images after they were transmitted from the camera to the computer. In contrast, the on-camera mode performs motion detection prior to transmitting the images to the computer. Thus, the on-camera motion detection allows significant reduction in the CPU load and the network load when motion detection is enabled.

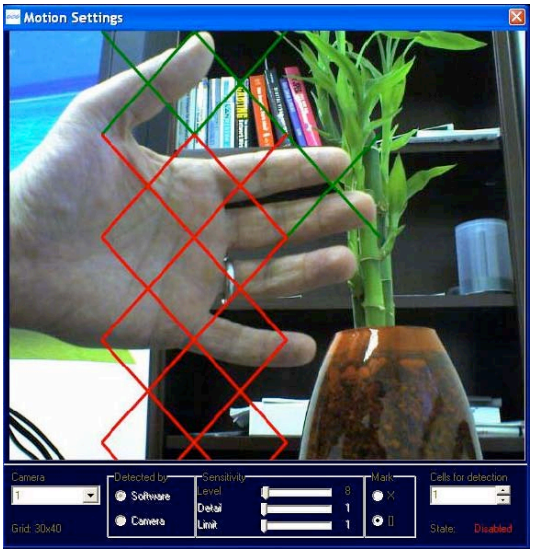
- Motion detection is enabled via the Archive settings when one of the two following options is selected: "Save all and mark motion" or "Save only motion". If the Archive is enabled for "Save all frames"

motion detection is disabled. The Enabled/Disabled status is displayed in the bottom right corner of the Motion Settings window.

- Motion detection is computed independently in multiple detection zones on a square grid. The largest grid supported for any CBC camera model and image size is 8 by 8. The actual grid for any particular model is determined by the chosen zone size (a drop-down list in the lower right corner of the Motion Settings screen) and the camera's pixel resolution. The actual grid is displayed in the lower left corner. When motion is present, the Motion Settings window displays green marks (selectable between crosses and boxes) in the zones affected.

- A privacy mask can be set up to block motion detection in some of the zones by drawing a rectangle with the mouse (by left-clicking and holding down the mouse button). The privacy mask is marked with red crosses. A more complex shape can be created by drawing multiple rectangles. Erasing the mask (or part of the mask) is done by drawing a rectangle with the right mouse button.





Motion detection settings apply only to the camera which number is displayed in the Camera field on the left of the Motion Settings menu: use drop-down list to change the camera number. The settings are:

- "Detected by" provides two options to select between the software motion detection and the on-camera motion detection. Note: some of the CBC camera models may not support motion detection on-camera.

- "Sensitivity" is a group of controls to adjust motion detection computation:
  - "Level" adjusts the inter-frame brightness change threshold that triggers motion detection. Lower settings may cause false motion detection due to noise.
  - "Detail" adjusts the size of the detectable objects within each motion detection zone. Lower settings may cause false motion detection due to noise.
  - "Limit" serves as a guard against false triggering due to a sudden overall change in lighting that would trigger motion detection in a large number of zones simultaneously. If the number of zones activated simultaneously is larger than "Limit", motion detection will be blocked. This parameter

cannot exceed the number of zones in the grid (displayed in the lower left corner of Motion Settings).

Save to

A lower level Save to menu allows to specify the directory path for video archives and for snapshot images. Note that while the name of archival directory should be the same for all cameras, it is possible to specify different Hard Drives for each camera.

Advanced

- "Don't update sensor window" is an option that determines how the changes to the image size are applied: at a software level or in hardware (the image sensor). Enabling this option helps to avoid conflicts when multiple users are viewing the same camera (each will be able to set different image size). Alternatively, disabling this option allows to increase the camera frame rate due to a smaller image size.

- "Use DirectX if possible" is an option to use DirectX functions that utilize graphics card hardware to display images instead of using the software. This reduces the load on the CPU. The drop-down list "DirectX size" provides options for the graphics area size supported by DirectX.

- "Auto – Startup" is an option to automatically restart the CBC Video System with the earlier settings after it was stopped.

- "RealTime if folded" is an option to continue running the CBC Video System application at the top priority level in the Windows Task Manager after the application was minimized and placed onto the system tray of the Windows task bar.

- "Show motion" is an option to mark the areas of the image where motion was detected.

- "Use double packets" is an option to use data packets with 2904 bytes instead of the regular 1450 bytes for image transmission. This allows to increase image transmission bandwidth, but may lead to a less stable performance on overloaded networks.

- "Warning on disconnect" is an option to display a red screen warning in place of live video that has been disconnected or temporarily lost. An alternative (when disabled) is to display the last captured frame.

- "Static ARP" is an option to enable a static link between the camera's MAC address and its IP address. An alternative is a dynamic ARP that is not supported by some of the older models of the CBC cameras.

Access Control / Permission

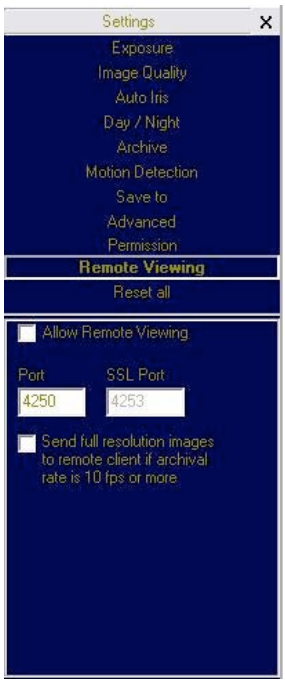
"Access Control" or "Permission" is used to set up password-protected access to CBC Video System. For any user there are three levels of access available (from the drop-down list):

- "Administrator" grants full access to all features of CBC Video System.
- "Viewer" grants access to live video and browsing the archives, but not to the settings.
- "Live only" grants access to live video only.

Adding, changing, and removing the users is done via three buttons "Add", "Change", and "Remove" on the bottom of the menu.

Remote Viewing

MPS software has built-in web server allowing CBC cameras and archives to be viewed remotely.



- "Allow Remote Viewing" enables the built-in HTTP server. Click "Apply" then click "Ok" on the bottom of the menu.
- Start Internet Explorer and type in the address of the web server. For example, if CBC Video System is installed on a PC with IP address 200.168.1.102, type in the following address:
- http://200.168.1.102:4250/guix.htm
- Then click "Enter" to have Internet Explorer open that page.
- Upon successful connection a web page will open. Internet Explorer will prompt to install an ActiveX component. Click on the webpage as prompted to install ActiveX.
- The main CBC menu located on the left hand side of the IE window will provide full access to each CBC camera. Selecting the CBC camera of choice will display the option to disconnect as well as make changes to settings such as the Resolution, Speed, Archive, Zoom and viewing images in separate windows.
- Right-clicking anywhere on the Explorer web page will provide access to the options menu:
  - "Save" to take a snapshot image.
  - "Manage Servers" provides server information and allows changes to the servers.
  - "Auto Hide Menu" allows to automatically hide the main menu.
  - "Settings" to adjust camera and video settings.

Day/Night

"Day/Night" settings apply only to MP3DN camera.

- "Automatic" enables the camera to automatically switch from daylight conditions (using the color sensor) to nighttime conditions (using the monochrome sensor), and back based on the Threshold settings (see below).
- "Day" enables the daylight mode and disables the nighttime mode.
- "Night" enables the nighttime mode and disables the daylight mode.
- "Threshold" adjusts the automatic switching of the camera:
  - "Switch At" adjusts the level of darkness to switch from daylight to nighttime mode.
  - "Toggle Guard" adjusts the level of brightness to switch from nighttime to daylight mode. Toggle Guard set to 0% corresponds to "Switch At" set to 100%. Toggle guard should be adjusted to prevent mode toggling during the transitional lighting.

Auto-Iris

The Auto-Iris menu allows monitoring the state of the automatic DC iris. If the scene is too dark, the camera will open the iris fully. This allows more light onto the sensor and will substantially improve the low-light performance. If the scene is too dark when the camera is started, the camera will not close the iris until there is enough illumination.

Camera DC auto- iris can be configured using "Auto-Iris" menu:

- The iris can be disabled by un-checking "Enabled". The camera will open the iris fully and have electronic auto-exposure working. This configuration is identical to using a manual lens.

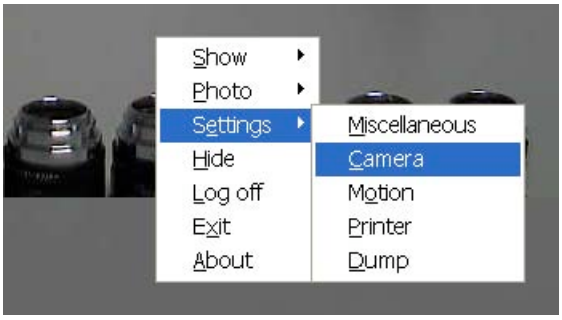
The state of the auto-iris is displayed on a color panel which has six different states:

- "Disabled": the auto-iris is either disabled by un-checking the "Enabled" check box, or is not present.
- "Evaluating": the camera is preparing to close the iris.
- "Too Dark": the camera cannot close the iris because the scene illumination is too low.
- "Closing": the iris is closing down by the number of F-stops appropriate for the lens model.
- "Closed": the iris is closed.
- "Opening": the iris is opening.

Auto-iris will open the lens fully once the on-camera analog gains exceed certain level. "Gain" scroll bar adjusts the point where the auto-iris will open fully: the higher the gain the later will the auto-iris open as the illumination diminishes.

Right-Click Menu

Right-clicking anywhere within the CBC Video System screen allows the user to invoke an additional menu:



1. "Show" presents two options:
   - "Archive" enables access to browsing archives. (See "Browsing Archives").
   - "Photos" enables access to snapshots taken with the CBC cameras. The default snapshots location is C:\Program Files\CBC America\Video Surveillance\photo, a different directory path to the snapshot folder can be specified in the Settings menu (see Settings).

2. "Photo" enables saving and printing individual snapshots, as well as browsing:
   - "Save" takes a snapshot of live video and saves it in the snapshot folder. The snapshot is taken from the camera which is highlighted in the drop-down list of the installed cameras (see Toolbar). To highlight another camera, left-click on the camera number. To take the snapshot from all cameras, highlight "cameras" at the root (top) of the drop-down camera list.
   - "Save/Print" takes a snapshot and prints it instantly.
   - "Browse" opens the snapshot folder for browsing.

3. "Settings" enables access to changing the main groups of settings as described in Settings (see Settings):
   - "Miscellaneous" enables access to the following:
     - "Authentication" see Permission.
     - "Remote Viewing" see Remote Viewing
     - "Save to" see Save to.
     - "Advanced" see Advanced.
   - "Camera" enables access to a combined menu that includes: Image Quality (see Image Quality), Exposure (see Exposure), Day/Night (see Day/Night), Auto-Iris (see Auto-Iris), and Archive (see Archive). It also includes some of the Advanced settings (see Advanced).
   - "Motion" enables access to Motion Settings (see Motion Settings).
   - "Printer" opens up the "Print Setup" menu.
   - "Dump" logs camera settings to a file named LocalMachine.ini located in the installation directory. When contacting CBC (America)'s technical support, this file should be included.
   - "Video" displays live video in full-screen mode.

4. "Hide" minimizes the CBC Video System application and hides it in the system tray of the Windows task bar.
5. "Log off" logs off the current user.

6. "Exit" exits the CBC Video System application.

7. "About" shows the version of the CBC Video System software and the additional information for each of the installed camera(s): revision of firmware, MAC address, and IP address.

User Authentication

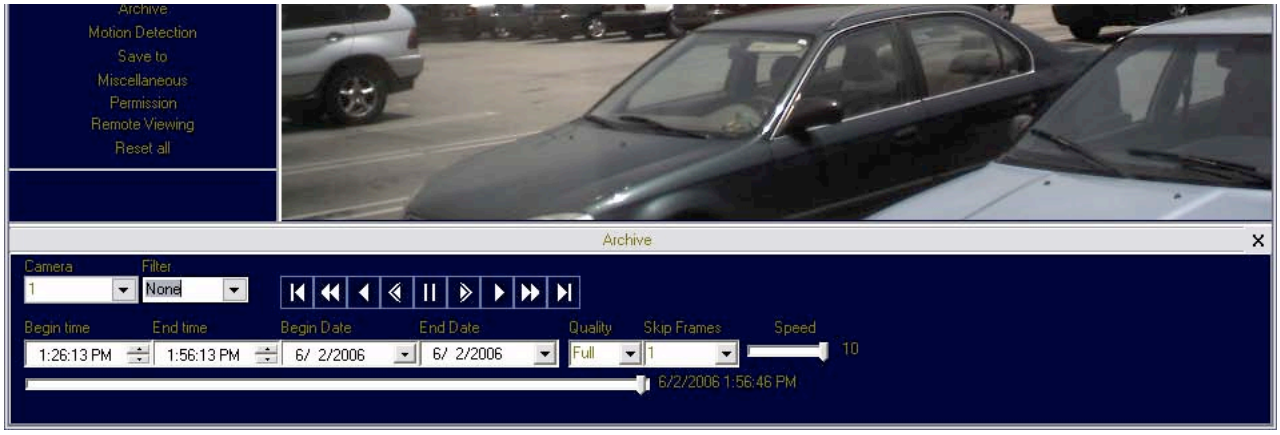
CBC Video System allows setting up password-protected access (see Access Control / Permission). If one or more user accounts were created, the CBC Video System will display a log-in dialog prompting for the user name and password, as shown below:

Language Selection

CBC Live Video System supports interfaces in English, Russian, Japanese, Arabic, Finnish, and other languages. To select language press the **F2** button to bring up the language menu.

Browsing Archives

Archive browsing is enabled by pressing the button in the Toolbar, or via the right-click menu (see Right-Click Menu).



Archive browsing controls are located on the bottom of the playback screen, as shown above. Archives are best viewed when the video is displayed in full-screen mode. The date-and-time stamp is located on the top left-hand side of the image. The user can select playback speed and frame skipping, as well as the image quality. If the archive was recorded using motion detection (see Motion Detection), browsing can be based on detected motion by selecting “Motion” from the drop-down list under “Filter”.

- Rewind - Starts browsing from the start of recording
- Fast Reverse

- Play in Reverse – Plays the recorded archive continuously in reverse
- Play by Frame in Reverse – Starts the playback one frame at a time in reverse
- Pause – Pauses the playback.
- Play by Frame Forward – Starts playback one frame at a time forward.
- Play – Plays the recorded archive continuously forward.
- Fast forward
- Forward - Starts browsing from the end of recording.

The slider on the bottom of the screen displays/positions the current frame position in the archive. It has a date-and-time display located to the right side of the slider to reference a particular event.

To take a snapshot from the archive use button from the Toolbar. Alternatively, snapshots can be taken by right-clicking on the video image, and then selecting "photo", "save".

AVI Maker - Making video clips from the archive

The AVI Maker is started by clicking the corresponding Run button in the CBC Application Manager.

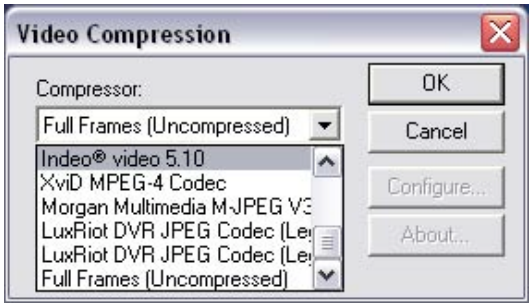
NOTE: PLEASE MAKE SURE THAT THE ARCHIVE IS NOT EMPTY WHEN MAKING AVI CLIPS.

1. Using the "Camera" drop-down list on the left select the camera archive for making the video clip from.

2. "DateTime" is for setting the start and the end of the archived events to be converted into the AVI video clip.

3. "Video Settings" provides three options:
   - "Size of Frame" adjusts the AVI frame size relative to the archived frame size.

- "Frame Period" adjusts the AVI frame rate (in milliseconds). If this setting does not match the archived frame rate, the AVI video will be playing accordingly faster or slower.
- "Video Compression" offers three options for making the AVI file:
    - "MSVC - standard" is a standard Microsoft video codec.
    - "XviD – http://www.koepi.org/xvid.shtml" is a codec recommended by CBC (America) (it is included in the CBC Software Setup, and is typically installed during the CBC software installation). This codec has been found to produce very good quality and compression of resulting AVI files.
    - "Codec List" allows the user to select any of the alternative codecs that are installed on the computer. The drop-down list opens after "Make AVI" is clicked, as shown below.



4. Click "Make AVI". If no records are available for the selected range of dates or times a warning will be displayed.

5. In the "Save as" window type in a file name for your new AVI file, then click Save**.** If "Codec List" was selected under "Video Compression" the drop-down list of available codecs will appear. Select a codec from the list to proceed.

6. The AVI Maker will begin to create the AVI and show the progress in the progress bar. Optionally, click Stop to terminate the process earlier than the end date/time set under "DateTime".

Firmware Loader - Upgrading the Cameras

All models of CBC cameras are field-upgradeable. CBC Firmware Loader is the utility for upgrading the camera's firmware and/or hardware. Note: all CBC cameras starting with firmware revision 51821 support firmware upgrades, and all CBC cameras with MAC address ending with 62-00 and above also support hardware upgrades. NOTE: IT IS RECOMMENDED THAT THE USER RUNS CBC CAMERA INSTALLER IMMEDIATELY PRIOR TO RUNNING THE FIRMWARE LOADER. The CBC Firmware Loader is started by clicking the corresponding Run button in the CBC Application Manager.

1. Click "Find Cameras". It may take up to a minute to find the camera(s). Once the camera(s) have been found select the camera(s) to upgrade.

2. To upgrade the firmware:
    - Click "Upgrade Firmware" and choose the firmware upgrade file. The file name starts with "fwupdate", and the file extension is .txt. MAKE SURE THAT THE CAMERA MODEL YOU ARE UPGRADING IS INCLUDED IN THE FWUPDATE FILE NAME.

- The firmware upgrade will start automatically. Do not disconnect the CBC camera. When the upgrade is complete "Success!" message will be displayed with the new revision of firmware.

3. To upgrade the hardware:
   - Click "Upgrade Hardware" and choose the hardware upgrade file. The file name starts with "hwupdate", and the file extension is .bin. MAKE SURE THAT THE CAMERA MODEL YOU ARE UPGRADING IS INCLUDED IN THE HWUPDATE FILE NAME.
   - The hardware upgrade will start automatically. Do not disconnect the CBC camera. When the upgrade is complete "Success!" message will be displayed with the new revision of hardware.

IMPORTANT: DISCONNECTING THE POWER TO THE CAMERA DURING THE UPGRADE WILL RESULT IN PERMANENT DAMAGE TO THE CAMERA.

HTTP Access

CBC (America) IP cameras employ proprietary massively-parallel image processing architecture, Megapixel WEB camera, and CBC Network Video are designed to provide low cost full motion high definition digital video across local area networks. Delivering over 45 Mpixels/sec of crystal-clear imagery, these state-of-the-art cameras represent cost-comparable but vastly superior alternative to low resolution analog and digital CCTV video.

CBC (America) cameras implement two distinct protocols, TFTP and HTTP that are used for image transmission. To support video-rate high quality image transmission CBC (America) cameras employ enhanced TFTP protocol allowing the cameras to deliver video at up to 55Mbits/s data rates. For developers wishing to gain video-rate access to the cameras from within their own applications, CBC (America) offers camera SDK for both Windows and Linux platforms. This SDK is implemented in a form of dynamically linked library and provides a level of abstraction from the protocol details, allowing the user application to employ simple commands such as GetImage() or SetParameter(). CBC (America) recommends the use of CBC SDK for the most efficient and flexible operation of the cameras.

However, the users who do not require full frame rates or those with limited software development resources may opt for accessing the cameras via HTTP protocol that provides video bandwidth comparable to other multi-megapixel products available on the market. This section lists basic HTTP commands supported by the CBC (America) cameras.

Camera Web Page

CBC cameras can be accessed from IE browser via the on-camera web page. The web page allows to change camera settings and to view live video by means of stored on-camera Java script. The web page is accessed by typing:

HTTP://ip_address or http://ip_address/index.html

In addition to the web page CBC cameras also implement html video container that can be used for incorporation of the camera url into user's own html page. Video container is accessed from:

http://ip_address/livevideo

To incorporate the video container in the users html page, the user should add the following line in the body of the page:

<iframe
src="http://200.168.1.10/"width="800"height="600"marginheight="0"marginwidth="0"scrolling="no"></iframe>

where parameters width and height specify the image size requested from the camera.

Troubleshooting and Useful Tips

Connecting Directly To Laptop or PC

In a typical scenario cameras are connected using network cables to a network switch. A camera can also be connected to a PC or laptop directly. Be sure to use a cross-over network cable between the camera and PC when connecting in this fashion.

When a camera is connected directly, in some cases you may need to change TCP/IP configuration on your PC. For example, configure the PC to work with a static IP address.

When a PoE injector is used and connected directly to a PC there are two network cables. One cable connects the PC to the PoE injector. The other connects the injector to the camera. Only one of these cables must be cross-over. The other cable must be regular, not cross-over.

Note: MP8D cameras require a higher PoE power class (Class 3: from 6.49 to 12.95 Watt) than other CBC camera models.

Switches and Routers

Note that some Gigabit switches and network adapters incompletely emulate 100BaseT signaling levels and may not work correctly with high bandwidth 100BaseT equipment.

Low Sharpness

If the image sharpness appears to be low:

- Check if the lens is in focus.
- Check if the lens is appropriate for a mega-pixel camera.
- Under Image Quality menu decrease compression and increase sharpness.
- Check if the lens iris is fully open or closed down too much. For best resolution and depth of field the iris (depending on lens make and model) should be closed by 2-3 F-stops.

Frequently Asked Questions

1. What type of video compression is used in CBC cameras?

CBC cameras use MJPEG - Motion JPEG.

2. How much storage space is required when using CBC cameras?

The storage space requirements will vary depending on how compressible your imagery will be. Shown below is an example of a system running at 22 FPS. However, the user can specify the archival frequency to be lower than the full frame rate. Most CBC cameras also provide highly sophisticated on-board motion detection. To further reduce the required storage the user has an option to archive only those images that contain the motion. Furthermore, CBC cameras support real-time resolution changes and image windowing on a frame-by-frame basis. The user may wish to archive windows of interest or reduced resolution images at the high frame rate while archiving full resolution images at the lower frame rate.

Busy scene, lot of motion (e.g. busy parking lot)									
FPS = 22									
	Quality = 2	Storage		Quality = 13	Storage		Quality = 21	Storage	
Resolution	Kbtyes/frame	Mbytes/Hr	Mbytes/24 Hr	Kbtyes/frame	Mbytes/Hr	Mbytes/24 Hr	Kbtyes/frame	Mbytes/Hr	Mbytes/24 Hr
2040x1530	202	15,998	383,962	278	22,018	528,422	463	36,670	880,070
1920x1200	154	12,197	292,723	216	17,107	410,573	352	27,878	669,082
1920x1080	148	11,722	281,318	202	15,998	383,962	329	26,057	625,363
1600x1200	128	10,138	243,302	176	13,939	334,541	293	23,206	556,934
1280x1024	100	7,920	190,080	139	11,009	264,211	227	17,978	431,482
640x480	29	2,297	55,123	40	3,168	76,032	60	4,752	114,048
Quiet scene, not a lot of motion (e.g. hallway)									
	Quality = 2	Storage		Quality = 13	Storage		Quality = 21	Storage	
Resolution	Kbtyes/frame	Mbytes/Hr	Mbytes/24 Hr	Kbtyes/frame	Mbytes/Hr	Mbytes/24 Hr	Kbtyes/frame	Mbytes/Hr	Mbytes/24 Hr
2040x1530	148	11,722	281,318	205	16,236	389,664	369	29,225	701,395
1920x1200	111	8,791	210,989	151	11,959	287,021	267	21,146	507,514
1920x1080	103	8,158	195,782	142	11,246	269,914	247	19,562	469,498
1600x1200	97	7,682	184,378	134	10,613	254,707	233	18,454	442,886
1280x1024	69	5,465	131,155	97	7,682	184,378	165	13,068	313,632
640x480	20	1,584	38,016	26	2,059	49,421	43	3,406	81,734
Notes: Quality refers to JPEG compression. Therefore Quality = 21 refers to high quality image									

3. Why am I having trouble running more than one camera?

Our MPS software implements a licensing policy where one camera will always work, but to have more than one camera displayed you will need a license file.

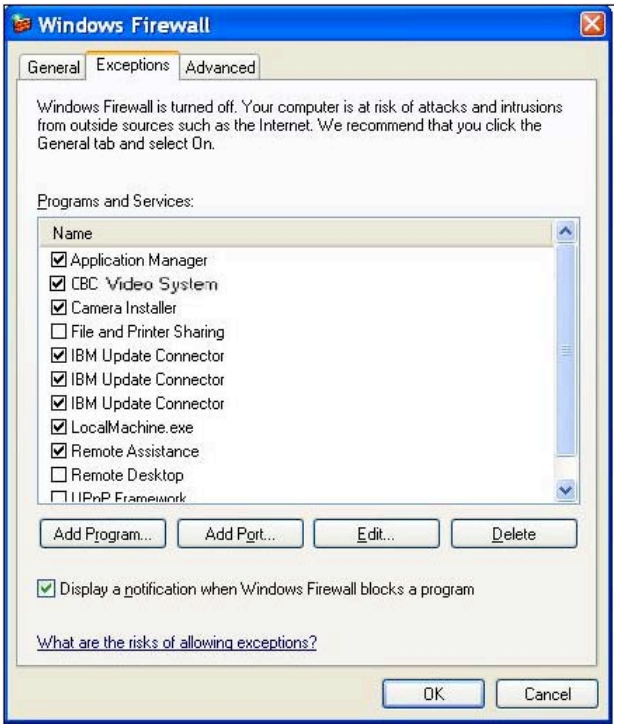
4. How do I change the location of the Archive folder?

The default destination of the Archive folder is C:\Program Files\CBC America. The location of the archive can be changed using "Save to" menu under "Settings". While the name of the archival directory should be the same for all cameras, the user has an option of specifying the Hard Drive for the archival on a camera-by-camera basis.

5. Why is my CBC (America) camera not detected by the Camera Installer?

If the camera in not detected it maybe because of the firewall settings. To allow Camera Installer access to the network the user should, configure the firewall properly. To configure the Windows firewall, access the **Windows Security Center** in the Windows **Control Panel**, then click on **Windows Firewall.**

In the Windows Firewall window click the **Exceptions** tab and add CBC programs (CBC Installer, CBC Manager, and CBC Video System) to the list of exceptions. Once the selections have been made click **OK,** and re-run the Camera Installer. If the Camera Installer still can not find the camera make sure that there are no hardware firewalls in the gateways and routers on your network.

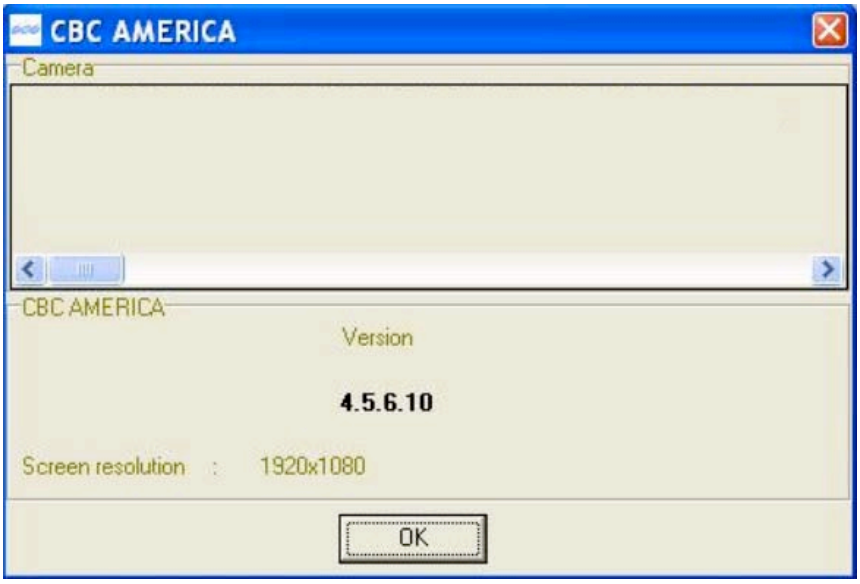


6. Can I update all my cameras with the same version of firmware?

There are three types of updates. One update will update the MP2 and MP5. The MP3DN and MP8D have their own updates; these should only be used for the MP3DN and MP8D. The camera model(s) is listed in the update file name.

7. How do I find out what version of software is installed and what are the IP and MAC addresses of my cameras?

This information is displayed in the **About** dialog (right click mouse and select **About**).



8. What is the cost of a CBC (America) camera?

The cost varies from camera to camera but for unparallel clarity our prices are unbeatable. Visit us online at www.cbcamerica.com

9. Is there third party software that can be used?

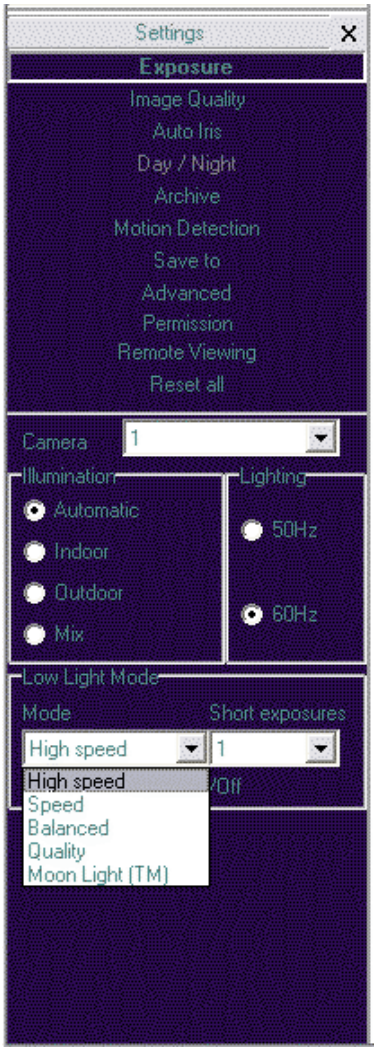
CBC (America) cameras are supported by many third-party software packages

Current NVR Partners:
Bosch – www.boschsecurity.com(DiBos 8)
D3DATA – www.d3data.com
DVTEL – www.dvtel.com
Genetec – www.genetec.com
General Electric – www.gesecurity.com
Integral Technologies - www.integral.com
ISN – www.isnsecurity.com
IP Vision Software – www.ipvisionsoftware.com
JDS – www.softsite32.com
LuxRiot – www.luxriot.com
March Networks – www.marchnetworks.com
Milestone – www.milestonesys.com
ONSSI – www.onssi.com
Quadrox – www.quadrox.com
Verint - www.verint.com (Smart Site/NDVR products)

Soon to be NVR Partners:
Tereo – www.tereo.com
Artec – www.artec.de
Geutebruck - www.geutebruck.com
Honeywell – www.Honeywell.com (Fusion products)
JVC – www.jvc.com
TridentTek – www.tridenttek.com

10. When should the user choose auto-iris option?

Certain CBC cameras support auto-iris option. These cameras are: MP2A and MP5A. Auto-iris option allows keeping the lens optimally closed when there is sufficient scene illumination, providing good depth of focus. When the illumination diminishes the camera opens the lens, allowing more light to reach the sensor, thus extending the sensitivity range of the camera. Auto-iris option should only be used for outdoor applications, where there is a large variation in illumination conditions. In many applications the auto-iris is unnecessary. It is important to keep in mind that the best image quality will be achieved with megapixel lenses. The auto-iris lenses available on the market today are not megapixel and will yield the images that are less crisp than those that can be obtained with manual megapixel lens.



12. What adjustments can be made to reduce the motion blur?

The shutter speed is automatically controlled by the camera. The motion blur may occur when the camera operates slow shutter speeds (long exposure times). This may happen when the scene is relatively dark. CBC cameras provide a number of options that allow the user to control auto-exposure behavior when the illumination is low.

The user can set the preferred exposure time that the camera will attempt to maintain as long as illumination level allows. This setting essentially allows the user to choose the tradeoff between gains and exposure time at reduced light levels. There are 3 basic settings: Speed, Balance, and Quality. These settings can be selected from "Low Light Mode" menu Mode list. Speed setting will result in higher image noise but will attempt to maintain 10ms exposure time for as long as possible, reducing motion artifacts. Quality setting will maintain 40 ms exposure time, resulting in low-noise image with some motion blur in low light. Balanced setting is in between.

There are also two special modes, High Speed and MoonLight™ that can be used for very fast moving targets and very low illumination, respectively. High Speed mode allows the user to specify fixed exposure time in terms of milliseconds (from 1 to 10). While this will allow crisp video of fast moving vehicles, the side effect of this setting is that low-light performance of the camera will be significantly worse (up to 800 times) than in default mode. Therefore, High Speed should only be used for well lit scenes.

The other special mode, MoonLight™ implements long exposure times (up to 0.5 seconds) in combination with proprietary noise cancellation technology. This mode allows viewing under extremely low illumination conditions. It is important to note, that MoonLight™ is NOT digital frame integration and will offer significantly better image quality than cameras that employ digital frame integration. However, the motion blur will still be significant.

Setting the Low Light Mode to Speed is the first thing to do to eliminate the motion blur. If that doesn't produce enough improvement, the user may want to open the lens aperture more to allow more light in. The user may also want to consider going with the camera equipped with auto-iris lens - the lens will open automatically as illumination diminishes. If that is not sufficient, the user may want to consider using lower resolution camera. For example, 2-megapixel MP2 has larger pixels and has better low-light sensitivity than a 3-mega pixel product. If that still does not yield sufficient low-light performance then, the user

should consider the MP3DN day-night camera that uses monochrome sensor in low light conditions and is sensitive to 0.01 lux .

11. How do I disable the auto startup of the CBC (America) software?

To disable the auto startup of the CBC Software start from **Settings** Select **Control Panel**, **Administrative Tools,** then double click **Services.** Under **Services (Local)** scroll down and double-click on **LMSrv**. In the LMSrv Properties window select the **General** Tab. Under the **Startup Type:** choose **Disabled.**

12. What is the maximum physical distance between computer and CBC camera?

Typical Ethernet 100Base-T has a maximum distance of 100 meters (330 feet). The range can be increased by using the standard powered mid-span switch. Alternatively, 3Com IntelliJack Switch that accepts the power over Ethernet can be used to avoid the need to provide mid-span power supply.

13. Are CBC cameras RoHS compliant?

CBC (America) products confirm to the Europeans Union Restrictions on Use of Hazardous Substances in Electrical and Electronic equipment (RoHS) Directive 2002/95/EC for six regulated substances. The certification is applicable to all CBC (America) products shipped after April 15, 2006.

14. Can we mount a motorized zoom lens from another supplier?

Motorized zoom is not supported by the camera, but you can mount the external PTZ unit with independent controls.

15. How do I access the CBC (America) Megapixel WEB camera home page to view my cameras remotely.

Simply type in http://**200.168.100.10**/index.html. Replace bold (**200.168.100.10**) IP address with actual camera IP address.

16. Is the Megapixel WEB camera home page compatible with Mozilla Firefox?

You can view photo, video, and adjust the camera setting via the internet using Mozilla Firefox.

17. Does your software include motion detection?

Our software does include motion detection. However, most CBC cameras also support on-board motion detection that, in contrast to software motion detection, does not take up CPU cycles. The "on camera" feature was implemented to reduce the overall network bandwidth so the camera itself will not send images until motion is detected. The user can adjust 3 motion detection sensitivity settings and specify up to 64 motion detection zones.

18. Can image archival be configured for cyclic recording?

MPS software will overwrite old files every few minutes once the available disk space reaches a limit value that the end user can set. By default the value is 15GB but can be changed manually by editing the [storage] field of LocalMachine.ini file located in C:\Program Files\CBC America\Video Surveillance.

19. Every time that I start the software application it starts recording all frames, even if I set it to record only motion frames. Is this a bug?

This is a bug that was fixed in software version 3.8.1 and above.

20. How do the CBC (America) cameras utilize PTZ (Pan, Tilt, Zoom)?

There is no mechanical PTZ. However CBC cameras have multi-megapixel resolution and allow instantaneous electronic pan, tilt and zoom by specifying PTZ window coordinates. Multiple users can each select their own windows, as though each user independently controls the PTZ.

21. How can I get the MPS built-in web server to work?

MPS software has built-in web server that allows multi-user remote access to live video and video archives. This web server can be accessed from IE browser by typing :

HTTP://**ip_address:port**/guix.htm

where ip_address is the IP addresses of the computer running MPS and the port corresponds to the port number set in the Remote Viewing menu. Please note that in order to access MPS server remotely the user should enable the server by checking the Allow Remote Viewing field and select the port that is not blocked by the firewall. For increased security the default value of remote access port is 4250. The user has the option to select any available port. Often the port 80 (HTTP port) is most likely to be open on the secured network as it is used by default by IE browser.

22. What is the night performance (Lux) of the MP3DN camera?

In low-light conditions MP3DN switches to 1.3 megapixel monochrome sensor resulting in good image quality down to 0.01 Lux. The MP3DN is also sensitive to near-infrared illumination – allowing the use of standard infrared illuminators as the light source.

23. When I attempt to update the firmware on the CBC camera with the firmware update option I receive the "Ack Timeout" message. Why do I get this error?

If you get the timeout message take the following steps:

- Make sure that no application is requesting the images from the camera during the update
- Make sure that the camera is connected via switch and not with direct cross-over cable
- Re-run CBC Installer prior to the upgrade to make sure that the camera is accessible and there is no IP conflict

24. Do the CBC cameras support multicast?

No, CBC cameras do not support multicast.

25. Are there any moving mechanical parts in the MP3DN?

The MP3DN does not have any mechanical moving parts inside.

26. What is Ethereal and where can I get it?

Ethereal is a network protocol analyzer. It can be obtained through their web site at http://www.ethereal.com/

27. What type of power supply is needed for CBC (America) cameras?

MP2 and MP5 cameras should be powered from a 9V to 12V DC power source providing at least 4W per camera. MP3DN requires 5W. 12V – 1A is recommended. MP8D requires 6W. Alternatively, all cameras can be powered using POE 802.3af compliant power supply or switch.

28. How do I reset the camera settings to the original factory configuration?

Resetting the CBC camera to its original configuration can be achieved through the built-in web server. To reset the CBC camera open IE explorer and type http://ip_address/set?params=factory . Replace ip_address with the actual camera IP address.

Regulatory Compliance

FCC Compliance Statement

All CBC cameras have been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.

1. It is suggested that the user use shielded CAT6 cables to comply with FCC rules.
2. It is suggested that the user use power-over-Ethernet supply
3. To comply with FCC rules when using auto-iris with MP2 it is also suggested using a ferrite common mode choke Fair-Rite # 0444164281 with 1 ½ turns place on the auto-iris lens cable three centimeters from the lens.